

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Medical Imaging Quiz – Case 30

A 60-year-old woman presented to our emergency department with acute left flank pain as in acute abdomen. Medically, she had diabetes mellitus and hypertension. Physical examination showed rebound tenderness and guarding in the left abdomen. On her arrival, the vital signs were stable, but she presented with tachypnea, tachycardia and she was pale without signs of hematuria. Laboratory examination showed a rapid decrease of hemoglobin. Because of the significant decrease in hemoglobin, a diagnosis of internal bleeding was suspected and the patient underwent an abdominal computed tomography (CT). CT scan demonstrated a retroperitoneal hematoma around the left kidney, and a large heterogeneous mass which contained adipose tissue. Contrast-enhanced transverse CT image clearly demonstrated contrast extravasation in the anatomical on the left kidney (figures 1a, b). The patient had a nephrectomy (fig. 2), and the postoperative course was uneventful and the patient was discharged after a few days.

#### Comment

Spontaneous renal hemorrhage is an uncommon condition, but can be life-threatening. Most common causes include angiomyolipoma (AML) and renal cell carcinoma (RCC). Renal AML is an uncommon (1–3% of renal neoplasms) benign mesenchymal tumour composed of varying amounts of fat, smooth muscle, and abnormal blood vessels lacking elastic tissue. Most (75–80%) are solitary unilateral tumours and are discovered most commonly in

middle-aged women. AMLs occur in two clinical spectrums: Sporadic and those associated with tuberous sclerosis. Most patients are asymptomatic and are often incidentally diagnosed using results of CT or US. Clinically, approximately 64–77% of tumours <4 cm in diameter are asymptomatic, although 82–90% of AML >4 cm produce symptoms. Usually, the patient presents with Lenk's triad, consisting of abdominal pain, flank mass, and signs of internal hemorrhage (hematuria). In 10% of patients, especially those with large tumours, there may be intense bleeding accompanied by hypovolemic shock, typifying the Wunderlich syndrome. Spontaneous rupture of renal AML, which is a rare but potentially life-threatening condition, is the most severe complication. There seem to be a relation between tumour size, aneurysm formation, and rupture in AMLs. As the tumour grows, the blood flow that enters the tumour increases, causing vessel dilatation and aneurysm formation and enlargement. On the other hand, rupture of an aneurysm may cause an increase in tumour size. US and CT are the most valuable initial examinations. US can easily demonstrate perirenal and subcapsular fluid collections as a screening test, and also may establish the diagnosis of an AML as a characteristically strikingly hyperechoic solid mass. However, US is sometimes unable to locate the source or the cause of bleeding.

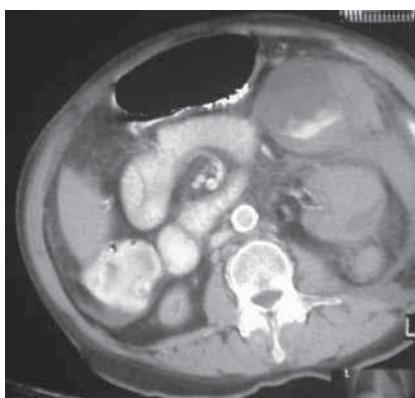


Figure 1a

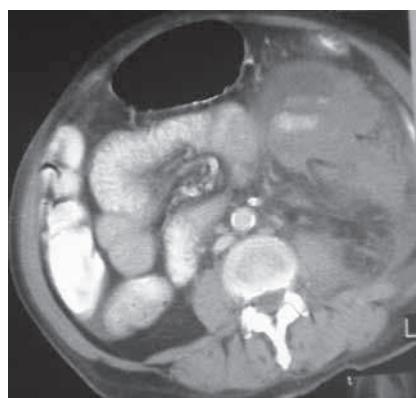


Figure 1b



Figure 2

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2013, 30(2):248–249

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*CT remains the investigation of choice, due to the fact that it can reveal a more definitive and precise image of the exact location and extent of the hemorrhage, and also show the underlying pathology. CT can differentiate between various types of a renal mass and assess the size of the AML and also identify an aneurysm formation. Fat density within a non-calcified renal mass remains the most important diagnostic finding of AML. Intratumoral calcification is very important finding for differential diagnosis, indicating renal cell carcinoma. Although fat is a characteristic finding of classic AML, there is also a fat poor radiographic subtype of AML that needs biopsy to be finally diagnosed. Other atypical appearances include lesions with extrarenal growth and other predominantly exophytic lesions mimicking non-renal tumours; in this case, coronal and sagittal sections are useful in confirming the renal origin of the tumour. The management of spontaneous renal hemorrhage will depend on two main factors: The hemodynamic status of the patient and the cause of bleeding. If the patient is stable, CT will be performed, as an adequate diagnostic study for determining the etiology of the condition. If the patient is not hemodynamically stable, urgent surgical exploration will be required.*

## References

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